

CLIMATOLOGICAL DATA FOR OCTOBER, 1911.

DISTRICT NO. 3, OHIO VALLEY AND TENNESSEE.

Prof. FERDINAND J. WALZ, District Editor.

GENERAL SUMMARY.

Unseasonably warm weather, which had prevailed so largely during the whole of September in the Ohio Valley, continued with only one or two brief interruptions until about the 21st of October, when there came a marked change to colder, and freezing temperatures with heavy frosts ruled the rest of the month. The month as a whole was warm and unseasonably wet, there being a large excess of rainfall over the greater portion of the district, much cloudiness, many rainy days, and a general lack of sunshine usual in this month. Midsummer-like conditions prevailed during the first week, especially over the southern half of the district, and again for a day or two in the middle of the month, and vegetation was green until after the occurrence of the first killing frost. General frost sufficiently heavy to cause much damage was some 8 or 10 days later this fall in its coming than usual, and immense good resulted from this extension of the growing season, allowing all outstanding crops to become fully matured. A second crop of raspberries was gathered at a place near Danville, Ill., and in Douglas County, in the same State, an experimental field of oats, planted July 26, was cut on the 26th of October, yielding about 30 bushels to the acre. The superabundance of rain, which in some sections was the greatest on record for a fall month, while greatly hindering all outdoor work, especially fall seeding, considerable wheatland being left unseeded, and corn in shock reported molding, was not entirely without its benefit, as it was extremely favorable for pastures and early sown grain. There were floods and freshets in many of the smaller streams and in some of the larger tributaries of the Ohio River the first part of the month, which caused a considerable amount of damage to growing crops in the valleys of the creeks and rivers, besides destruction to other property.

During the first week three well-defined barometric depressions of considerable intensity and attended by rain, thunderstorms, and some wind squalls, and the high temperature before mentioned, passed over or near the district. Also in the period 15th-17th an extensive barometric disturbance moved across the Central States, attended by heavy rains over much of the Ohio Valley. High-pressure areas largely dominated the second week of the month and from the 18th to the 30th, inclusive.

TEMPERATURE.

The temperature for the month averaged above normal for the district as a whole and for each of the States or portions of States comprising it. For the States north of the Ohio River and for western Pennsylvania the temperature was close to normal, the departure being less than $+1^{\circ}$. From the Ohio River southward the average

temperature departure increased from about $+2^{\circ}$ in northern Kentucky to $+5^{\circ}$ in western North Carolina. It was above normal at practically all stations in Kentucky, Tennessee, West Virginia, and the sections of the States forming the southern border and including southwestern Virginia, the excess at the numerous stations ranging from 1° to 7° , the latter amount occurring in extreme eastern Tennessee and extreme southwestern North Carolina. At a few stations in eastern Ohio the departure ranged from $+2^{\circ}$ to $+4^{\circ}$, also it was $+2^{\circ}$ to $+3^{\circ}$ at a few stations in southwestern Indiana, but nearly normal conditions obtained at the other stations in those two States. The most extensive area with deficient average temperature was the upper Wabash Basin in Illinois and Indiana, but at no station in the entire district was there a deficiency greater than -2° .

Except for three or four days at most the temperature was above normal during the whole of the first and second decades of the month. On several days during the first week remarkably high temperatures for the season were recorded in most of the States of the Ohio Valley. Maximum temperatures of 90° and over were of common occurrence in Kentucky, Tennessee, and northern Alabama, and at one place, Decatur, Ala., it reached 100° on the 4th. During the same time maximum temperatures of 80° to 90° were registered in West Virginia, western North Carolina, and southwestern Virginia. Over the rest of the district, however, that is, western New York, western Pennsylvania, and western Maryland, the temperature did not reach 80° at any time during the month except at one station, viz, Brookville, Pa., where it was 81° on the 9th. The breaks in the warm weather during the first 20 days of the month occurred as follows: On the 2d and 3d the temperature was from 6° to 7° below normal in the extreme northeastern portion of the district; on the 5th it was from 2° to 8° below normal over the entire northern portion of the district, and on the 8th it was from 4° to 10° below normal in practically all parts of the district except in the southeastern section. Over this section, embracing eastern Tennessee, western North Carolina, and southwestern Virginia, the temperature was above normal during practically the entire time of the first and second decades. Temperatures were again unseasonably high on the 15th and 16th, the daily average ranging from 5° to 12° above normal and maximum temperatures registering between 72° to 88° . A decided change to colder occurred about the 21st and during the remainder of the month the temperature was almost continuously below normal. On the 23d and 24th killing frosts were more or less general over the entire Ohio Valley, and during the last decade freezing temperatures occurred in every section of the district. The lowest temperature of the month, 18° , was reached at Brookville, Pa., on the 30th. Little or no damage was done by the

killing frosts as at the time of its appearance practically all crops had either been gathered or were fully matured. Over much of the district killing frosts were from one to two weeks later than usual, thus extending the growing season to that extent, which was very beneficial. Killing frost occurred at one station in Pennsylvania as early as the 4th and at several stations in that State and in Ohio on the 8th and light frosts at quite a few stations in various parts of the district on scattered dates during the first and second decades. As a rule, however, the killing frosts of the period 23d to 25th were the first frosts of the season. Large flocks of wild geese were flying southward at the end of the month.

PRECIPITATION.

Precipitation was unusually large in amount and frequent in occurrence for October in nearly all parts of the Ohio Valley. Over considerable of the district, particularly the eastern half and in southeastern Indiana, it averaged nearly double the normal amount for the month, while at many stations in this area considerably more than double the usual amount was received, and at some stations the amounts were the largest of any October of local record. About the only part of the district where precipitation was deficient over any extensive area was in the lower Ohio Valley proper; that is, in southern Illinois and western Kentucky. In this area the amount was generally less than 2 inches and at a few stations less than 1 inch. The greatest monthly precipitation, ranging from 5 to 9 inches, occurred over a large area extending from southeastern Indiana southeastward over eastern Kentucky, southern West Virginia, and into southwestern Virginia; over a smaller, although considerable area, comprising the Allegheny River watershed in western Pennsylvania and the Mahoning River watershed in northeastern Ohio; over considerable of central Ohio; and over a relatively small area in east-central Tennessee. Over the remainder of the district the monthly rainfall ranged between 2.5 and 5 inches.

The distribution of precipitation through the month was in five general periods: 1st-4th, 7th-11th, 15th-18th, 22d-23d, and 30th-31st. During the first three of these periods there were some very heavy rains over large areas of the district, but during the last two, while there were moderately heavy rains in some localities, the precipitation as a rule was light. Snow flurries occurred in several of the northern States of the district on one or two days. The first snow of the season occurred on the 21st in the Wabash Valley of Illinois.

Heavy rains at the beginning of the month, following so closely the unusually large rainfall of September, caused damaging floods in some of the upper tributaries of the Ohio River and in many of the smaller streams of the central and eastern portions of the watershed. Floods in the Allegheny and Mahoning River basins caused a property loss in western Pennsylvania and northeastern Ohio of nearly a million and a half dollars, besides several lives. The damage was especially large in the Beaver River section of western Pennsylvania. Timely flood warnings were widely distributed by the local office of the Weather Bureau at Pittsburgh, Pa., and resulted in the saving of considerable property which would otherwise have been lost. There was also a great deal of damage by floods during this same period in the rivers and small streams in portions of Illinois and Indiana, and in eastern Kentucky, the damage being especially great in the Licking and upper Kentucky River basins of Kentucky,

and over the East Fork of White River and the extreme southeastern counties of Indiana. Besides general property loss in these sections, growing crops suffered much damage.

MISCELLANEOUS.

Thunderstorms attended by severe wind squalls caused considerable damage in various localities in the district on the 3d, the wind reaching a velocity of 50 miles per hour at Pittsburgh, Pa. Several large tobacco and stock barns were destroyed and stock killed in the north-central counties of Kentucky. On the 6th and 7th, considerable damage resulted from thunderstorms, wind squalls, and heavy rains in the central counties of Ohio. In the period 14th to 15th, sections of Illinois, Indiana, and Kentucky were visited by local thunderstorms attended by destructive lightning, wind squalls, and hail. Numerous barns were destroyed and considerable stock was killed in those States. The most destructive storm of the month crossed central Indiana on the 14th, of which the section director at Indianapolis furnishes the following detailed account:

SEVERE WINDSTORM CROSSES THE STATE OF INDIANA.

[By VERNE H. CHURCH, Section Director.]

One of the most destructive windstorms of many years in Indiana crossed that State during the late afternoon of October 14, 1911. It made its first appearance in the vicinity of Veedersburg, Fountain County, then traveled eastward to Hillsboro, Waynetown, Crawfordsville, thence southeastward to Danville, and nearly east from there to Indianapolis. The last damage of consequence occurred at Ben Davis, a small village 4 miles west of the western limits of the city of Indianapolis. The wind at Indianapolis was not of unusual velocity, and no damage occurred there or at points to the eastward, although a marked disturbance in the atmospheric pressure took place at Richmond, as registered by the barograph of Prof. B. W. Kelly, of the high school in that city. Large fluctuations in barometer occurred also at Indianapolis and at La Fayette. The record at La Fayette was furnished by William J. Jones, jr., of Purdue University. The storm traveled an approximate distance of 140 miles at an average rate of 45 or 50 miles an hour, judging from the barograph records.

The miraculous feature of the storm was the fact that, although many buildings were completely demolished, no persons were killed at any of the places visited, and but few injured, and these not seriously.

The estimated property loss from the storm is \$80,000, divided as follows: Veedersburg, \$5,000; Hillsboro, \$25,000; Danville, \$500; Ben Davis, \$40,000; scattered points in rural districts of region traversed, \$9,500.

At Veedersburg the storm approached from the northwest, and was said to have been accompanied by a funnel-shaped cloud. The trees and poles blown down fell toward the southeast over the entire path of destruction, which was but 50 feet in width.

At Hillsboro the damage to property ranged over a territory 1 mile in width. The storm approached from the southwest, and a cloud of funnel shape was observed about 4.05 p. m. Trees on the north side of the path fell toward the north; on the south side, toward the east; and in the center, nearly east.

The damage at Danville was not extensive. The path covered was about 50 yards in width, and the funnel-shaped cloud was observed. The trees on the north side of the path fell toward the south; on the south side, toward the north; and in the center, toward the east. This plainly indicates that a rotary motion took place at this point.

The greatest damage occurred at Ben Davis, which the storm reached about 5.30 p. m. The wind blew from the southwest, and trees, telephone poles, and the walls of buildings fell toward the northeast over the path of the storm in that vicinity, which was nearly one-half mile in width, although the principal destruction was confined to less than one-eighth mile in width and about the same distance in length. The writer visited the scene of the disaster at Ben Davis and made a thorough examination of the débris, but was unable to find any evidence of a rotary movement of the storm or any explosive effects produced by the sudden expansion of the air within the buildings destroyed, so characteristic of tornadoes in general. A church, concrete factory, and about one dozen houses and barns were completely demolished, and many other houses and barns were damaged. Many large trees were uprooted or broken off, and telephone and electric-light poles were leveled throughout the village.

The storm was almost immediately followed by a heavy fall of rain and hail at Indianapolis, which lasted only a short time, however,

TABLE 1.—Climatological data for October, 1911. District No. 3, Ohio Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.								Precipitation, in inches.								Sky.	Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmetted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.				
<i>New York.</i>																						
Allegany.....	Cattaraugus.....	1,441	5	49.2		76	4	19	28	40	3.54		0.80	T.	13	11	6	14	nw.	Chas. E. Whitney.		
Bolivar.....		1,800	17										0.86	0	13	12	6	13	w.	B. O. Newton.		
Olean.....	Cattaraugus.....		3																		John W. Alles.	
<i>Pennsylvania.</i>																						
Allegheny.....	Greene.....	1,135	10	53.9	+ .6	78	4	26	29	37	5.10	+ 2.69	1.41	0	12	16	5	10	n.	J. S. Hinerman.		
Baldwin.....	Butler.....	1,404	5	51.4		76	4	23	29	34	8.79		3.00	0	13	5	7	19	w.	S. H. Templeton.		
Beaver Dam.....	Beaver.....	674	17										4.96	+ 2.84	1.53	0	11	5	1	25	nw.	U. S. Engineer.
Brookville.....	Jefferson.....	1,173	0	50.9		81	9	18	30	54	4.78	+ 2.18	2.05	0	9					w.	H. C. Bartholomew.	
Clarion.....	Clarion.....	1,078	26										6.69	+ 3.08	2.40	0	10	9	0	22	s.	J. A. Miller.
Claysville.....	Washington.....	1,127	7	54.6		79	6	23	29	40	6.68		2.00	0	13	8	11	12	w.	E. T. Buchanan.		
Confluence.....	Somerset.....	1,352	27										5.72	+ 2.98	1.40	0	12	4	4	23	w.	Grant Pyle.
Franklin.....	Venango.....	955	37	56.1	+ 3.7	77	5	22	29†	43	5.15	+ 2.27	1.88	0	10	15	3	13	nw.	F. E. Dixon.		
Freepo...t.....	Armstrong.....	772	38										6.02	+ 3.53	1.79	0	10	4	2	25	sw.	Mrs. Anna R. Bu
Greensboro.....	Green.....	768	22										4.56	+ 1.90	1.20	0	12	14	5	12	n.	James C. Cramer.
Greenville.....	Mercer.....	950	15	50.5	+ .9	78	4	22	29	46	4.89	+ 1.67	1.57	0	12	18	7	6	nw.	A. M. Orr.		
Indiana.....	Indiana.....	1,350	14	53.1	+ 1.8	79	4	23	29	38	6.67	+ 3.72	1.25	0	15	13	11	7	s.	R. W. Wehrle.		
Johnstown.....	Cambria.....	1,184	23	54.6	+ 1.3	78	4	29	29†	34	4.75	+ 2.16	1.21	0	15	8	15	8	w.	E. C. Lorentz.		
Lock No. 4.....	Washington.....	718	25										4.12	+ 1.58	1.35	0	9	3	7	21	s.	R. T. McGowan.
Lycopus.....	Westmoreland.....	1,420	19	54.2	- .3	77	4	30	29	33	4.19	+ 1.75	1.40	0	14					nw.	Murray Forbes.	
Pittsburgh.....	Allegheny.....	842	41	54.2	- .7	77	4	29	29	49	4.94	+ 2.58	1.83	0	14	9	8	14	nw.	U. S. Weather Bureau.		
Saegerstown.....	Crawford.....	1,116	20	50.3	- .0	76	4	21	29	40	5.01	+ 2.03	.92	0	17	6	12	13	se.	J. G. Apple.		
Skidmore.....	Lawrence.....	1,000	7	51.4		72	21	19	29	35	6.45		3.00	0	6	18	2	11	nw.	W. H. Stoner.		
Somerset.....	Somerset.....	2,250	55	52.3	+ 3.9	79	21	27	25	43	4.77	+ 1.97	.86	0	14	1	20	10	n.	W. M. Schrock.		
Uniontown.....	Fayette.....	999	23	54.7	+ .7	77	6	30	30	32	6.06	+ 3.06	1.80	0	14	10	7	14	nw.	Wm. Hunt.		
Warren.....	Warren.....	1,137	22	54.8	- 2.1	75	6	21	29	40	4.85	+ 1.86	1.25	0	12	17	0	14	nw.	Anna Simpson.		
<i>Maryland.</i>																						
Deer Park.....	Garrett.....	2,457	17	51.5	+ 3.2	79	1	23	26†	44	6.23	+ 3.96	1.49	0	11					s.	S. P. Specht.	
Grantsville.....	do.....	2,351	17	51.4	+ 1.5	72	4	28	25	30	5.02	+ 2.59	0.90	0	10	8	4	19	w.	J. S. Miller.		
Oakland.....	do.....	2,461	11	51.8		75	6	25	30	36	5.63		1.37	0	15	11	9	11	w.	R. E. Weber.		
<i>West Virginia.</i>																						
Bancroft.....	Putnam.....	574	10	60.2		87	6	33	25	40	4.50	+ 1.59	1.35	0	12	13	0	18	ne.	R. E. Dent.		
Beckley.....	Raleigh.....	2,440	12	57.4	+ 3.8	80	2†	30	25	43 ^k	7.20	+ 5.05	2.50	0	11	16	4	11	w.	John A. Ewart.		
Bens Run.....	Pleasants.....	622	10	57.8	+ 2.2	82	6	33	29	35	6.11	+ 3.46	2.09	0	11					n.	J. D. Riggs.	
Bluefield.....	Mercer.....	2,563	17	57.7		79	1†	33	24	34	7.36		2.70	0	12	11	6	14	sw.	Norfolk & Western R. R.		
Buckhannon.....	Upshur.....	1,472	20	54.4	+ 1.8	79	4	26	25	37	6.36	+ 3.14	1.70	0	11	17	5	9	n.	H. A. Darnall.		
Cairo.....	Ritchie.....	667	10	57.9	+ 1.6	82	6	30	25†	33	3.45	+ 0.27	1.00	0	9	20	11	11	w.	Van A. Zevely.		
Central Station.....	Doddridge.....	900	11	52.8		81	6	25	25	43 ^f	5.28	+ 3.06	1.70	0	9	9	7	7	sw.	G. W. Sherwood.		
Charleston.....	Kanawha.....	598	24	60.1		85	1	35	25	33	5.15	+ 2.71	1.63	0	11	15	7	9	w.	R. C. Hewes.		
Creston.....	Wirt.....	612	11	57.3	+ 3.3	82	1†	31	25	37	4.23	+ 1.92	1.15	0	10	14	3	14	w.	J. M. Reed.		
Cuba.....	Jackson.....	544	10	56.6		84	1	29	24	39	4.98		2.08	0	10	7	15	9	nw.	C. T. Perry.		
Elkhorn.....	McDowell.....	1,933	19	58.8	+ 3.5	80	5	31	24	33	7.62	+ 5.38	2.10	0	10	13	5	13	sw.	J. J. Lincoln.		
Elkins.....	Randolph.....	1,940	13	54.9	+ 3.6	80	6	27	25	41	6.11	+ 3.19	1.77	0	13	11	6	14	nw.	U. S. Weather Bureau.		
Fairmont.....	Marion.....	879	18	58.0		83	6	30	24	40	5.03	+ 2.61	1.85	0	11					sw.	H. Glenn Fleming.	
Glenville.....	Gilmer.....	738	22	58.0	+ 3.4	81	1	33	22†	37	4.80	+ 1.96	1.02	0	8	14	3	14	w.	John Holt.		
Grafton.....	Taylor.....	985	18	58.7	+ 3.9	87	1	31	25	39	5.26	+ 2.71	1.50	0	16	16	0	15	w.	Josef h Gerken.		
Green Sulphur Springs.....	Summers.....	1,600	16	57.6	+ 3.5	81 ^a	4	28	25	42 ^a	5.43	+ 3.93	1.88	0	11	12	5	14	w.	Arthur George.		
Hinton.....	do.....	1,400	21	58.9	+ 2.9	84	4	33	25	40	6.08	+ 3.95	1.80	0	10	16	3	12	sw.	J. B. Lavender, C. E.		
Huntington.....	Cabell.....	510	17	57.3	+ 1.3	82	1	35	25†	31	4.32	+ 2.30	1.56	0	12	16	1	14	w.	L. H. Hutchinson.		
Lewisburg.....	Greenbrier.....	2,200	11	56.1	+ 3.5	80	4	28	26	38	5.33	+ 2.77	1.87	0	10	20	2	9	sw.	Geo. T. Argabrite.		
Logan.....	Logan.....	665	10																	sw.	Geo. A. Dean.	
Lost Creek.....	Harrison.....	1,033	15	55.4	+ 1.4	80	16	25	25	41	4.76	+ 2.46	1.80	0	9	15	2	14	w.	Allen Smith.		
Madison.....	Boone.....	704	8																	sw.	S. E. Bradley.	
Mannington.....	Marion.....	967	10	55.4		79	4	27	30	40	4.77	+ 2.34	1.62	0	14	13	3	15	sw.	Jas. A. Morgan.		
Marlinton.....	Pocahontas.....	2,109	17	57.6*		80	4	26	25	43 ^b	5.96	+ 3.59	1.57	0	11	14 ^e	5 ^e	7 ^e	n.	C. J. McCarty.		
Morgantown.....	Monongalia.....	1,250	36	55.6	+ 0.7	79	6	32	31	35	5.65	+ 2.71	2.20	0	11	8	10	13	s.	Horace Atwood.		
Moundsville.....	Marshall.....	640	10	57.2	+ 1.8	82	4	29	29†	30	5.13	+ 2.22	1.38	0	13	17	1	13	sw.	M. L. Brown.		
New Cumberland.....	Hancock.....	987	14	55.5	+ 1.7	86	4	24	29	45	4.30	+ 1.87	1.40	0	13	11	3	17	s.	Frank S. Evans.		
New Martinsville.....	Wetzel.....	634	18	57.9	+ 1.5	83	17	32	30	36	4.79	+ 2.44	1.32	0	11	18	8	5	n.	Wm. Ankron.		
Nuttallburg.....	Fayette.....	2,252	18										4.90	+ 2.66	1.20	0	6	12 ^f	3 ^f	10 ^f	sw.	Miss Donna Tilly.
Parkersburg.....	Wood.....	638	24	56.6	+ 2.0	83	1	33	25	32	4.45	+ 2.01	1.74	0	11	8	5	16	n.	U. S. Weather Bureau.		
Parsons.....	Tucker.....	1,602	12	54.6	+ 2.4	78	6†	28	25	43	5.00	+ 2.46	1.62	0	9	13	9	9	sw.	J. W. Swisher.		
Philipipi.....	Barbour.....	1,192	18	55.6	+ 2.2	81	6	30	24†	39	6.81	+ 4.19	1.87	0	14	10	15	6	nw.	J. D. Dadisman.		
Pickens.....	Randolph.....	2,785	20	53.4	+ 3.5	73	6	29	24†	35	6.											

TABLE 1.—Climatological data for October, 1911. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Departure from the normal.			Greatest daily range.			Departure from the normal.			Total.							
				Mean.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Greatest in 24 hours.	Total.	Number of rainy days 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.				
Ohio—Continued.																				
Camp Dennison.	Hamilton.	570	18	56.0	+ 0.8	85	6	26	29	39	4.94	+ 3.14	1.09	0	13	11	11	9	sw.	
Canal Dover.	Tuscarawas.	884	18	52.0	+ 0.4	85	4	24	29	32	4.67	+ 2.62	0.97	0	12	9	14	8	n.	
Canton.	Stark.	1,088	28	52.6	+ 1.1	78	4	27	29	34	4.66	+ 2.43	0.88	0	15	16	4	11	nw.	
Cardington.	Morrow.	1,010	16	53.6	+ 2.3	80	6	25	28	33	.....	.....	0	0	7	0	24	24	nw.
Chillicothe.	Ross.	630	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	0	0	0	0	.....
Cincinnati.	Hamilton.	628	40	57.4	+ 0.4	84	6	35	28	33	4.54	+ 2.22	1.17	0	14	6	11	14	ne.	
Circleville.	Pickaway.	694	23	53.2	+ 1.7	84*	6	28*	28*	37	4.71	+ 2.54	2.30	0	9	11	3*	10*	n.	
Clarington.	Monroe.	600	8	55.6	.....	80	1†	27	29	38	5.55	.....	1.50	0	16	10	17	13	sw.
Columbus.	Franklin.	918	33	54.1	+ 0.0	82	6	32	28	34	5.21	+ 2.86	2.69	0	11	7	11	13	se.	
Coshocton.	Coshocton.	770	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	0	0	0	0	.....
Dayton (1).	Montgomery.	899	54.7	.....	.....	83	6	32	29	35	4.34	.....	1.76	0	13	7	5	19	ne.
Dayton (2).	do.	790	30	54.6	+ 0.5	84	6	26	29	38	5.19	+ 3.03	2.00	0	12	12	12	11	w.	
Delaware.	Delaware.	927	14	53.0	- 0.7	77	16	28	24	35	5.12	+ 3.11	1.27	0	9	15	5	11	.....
Demos.	Belmont.	1,325	23	55.0	+ 2.2	84	21	30	29	39	5.25	+ 2.82	1.63	0	14	14	8	9	n.	
Dennison.	Tuscarawas.	S46	1	52.0	.....	79	4	23	29	35	3.77	.....	0.93	0	13	16	7	8	s.
Frankfort.	Ross.	745	19	53.8	+ 2.1	82	1	27	29	37	3.15	+ 1.96	1.00	0	8	17	1	13	.....
Garrettsville.	Portage.	1,005	27	50.2	+ 0.9	75	4	20	29	38	6.00	+ 3.32	2.28	0	12	10	9	12	nw.	
Licking.	Granville.	960	29	54.0	+ 1.4	79	6	25	29	33	5.57	+ 3.16	2.02	0	12	13	4	14	w.	
Gratiot.	do.	1,000	22	53.0	+ 0.1	78	6	25	29	33	4.81	+ 2.77	1.52	0	11	11	12	8	w.	
Green.	Adams.	500	18	58.9	+ 3.0	88	1	33	24	35	4.22	+ 2.05	1.61	0	7	14	8	9	w.	
Green Hill.	Columbiana.	1,135	17	50.6	- 0.2	75	4	20	29	35	4.09	+ 2.03	1.08	0	12	12	13	6	nw.	
Greenville.	Darke.	1,060	25	53.2	+ 1.1	81	6	28	30	33	5.97	+ 4.11	2.55	0	11	9	11	11	n.	
Haydenville.	Hocking.	700	55.2	.....	.....	81	1†	25	29	37	4.60	.....	2.00	0	9	16	2	13	nw.
Hillsboro.	Highland.	1,063	32	55.6	+ 0.2	84	1†	29	29	40	5.13	+ 3.04	1.66	0	10	6	14	11	sw.	
Ironton.	Lawrence.	575	28	58.4	+ 3.4	88	1	31	25	41	4.76	+ 3.33	0.93	0	11	13	7	11	sw.	
Jacksonburg.	Butler.	975	43	57.2	+ 1.5	85	6	34	29	42	4.46	+ 2.27	1.35	0	7	16	0	15	ne.	
Kenton.	Hardin.	1,015	19	50.4	- 2.3	80*	6	26	28	32	3.20	- 0.09	0.77	0	7	9	5	14	n.	
Killbuck.	Holmes.	1,087	19	53.0	+ 0.5	80	6	22	29	35	6.17	+ 4.22	1.25	0	12	16	5	10	se.	
Lancaster.	Fairfield.	898	16	55.0	+ 1.0	79	1†	28	29	32	6.76	+ 4.83	3.04	0	10	16	1	14	sw.	
McConnelsville.	Morgan.	710	27	55.6	+ 2.1	79	4	26	29	35	6.09	+ 3.79	3.39	0	12	10	11	11	s.	
Marietta.	Washington.	627	91	55.6	+ 2.6	80	1	30	29	31	5.12	+ 2.25	1.92	0	11	12	6	13	n.	
Marion.	Marion.	980	33	54.1	+ 0.7	82	6	25	29	36	5.60	+ 3.38	3.55	0	8	9	8	14	sw.	
Mifordton.	Knox.	1,200	19	53.2	+ 1.5	78	6	27	30	35	5.62	+ 3.71	1.51	0	11	12	11	8	ne.	
Milligan.	Perry.	575	18	54.4	+ 0.7	82	4	22	29	38	5.21	+ 2.85	2.68	0	10	15	7	9	sw.	
Millport.	Columbiana.	1,145	18	51.2	- 0.7	75	4	20	29	35	3.91	+ 1.86	0.93	0	14	7	15	4	sw.	
Nellie.	Coshocton.	850	11	53.4	+ 0.8	77	6	23	29	34	5.60	+ 3.66	1.43	0	11	5	22	4	sw.	
New Alexandria.	Jefferson.	1,050	26	57.2	+ 4.2	83	11	22	29	37	4.11	+ 1.65	1.20	0	6	13	3	15	n.	
New Berlin.	Stark.	1,100	18	50.9	- 0.9	75	4	22	29	33	5.27	+ 3.24	1.74	0	13	16	5	10	nw.	
New Waterford.	Columbiana.	1,053	16	51.6	0.0	76	4	21	29	34	5.48	+ 3.41	1.97	0	7	16	8	7	sw.	
Ohio State University.	Franklin.	757	28	53.7	+ 1.5	82	6	27	29	35	5.39	+ 3.28	2.03	0	12	10	9	12	n.	
Pataskala.	Licking.	1,015	19	53.3	- 0.1	80	6	26	29	34	5.68	+ 3.45	2.48	0	12	8	15	8	sw.	
Peebles.	Adams.	645	1	56.8	.....	85	6	26	29	34	4.24	.....	1.25	0	10	7	14	10	sw.
Philo.	Muskingum.	1,018	16	54.0	- 0.5	78	6	28	29	34	4.47	+ 2.57	1.51	0	11	13	7	11	se.	
Piqua.	Miami.	847	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	12	14	2	15	ne.
Plattsburg.	Scioto.	1,130	18	53.0	- 1.3	80	6	28	29	35	5.73	+ 3.77	2.35	0	11	14	9	8	w.	
Portsmouth.	Clark.	527	80	57.0	+ 1.4	85	1	33	25	34	3.36	+ 0.67	0.88	0	12	13	0	18	w.	
Prospect.	Marion.	909	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	12	13	0	18	.....
Rittman.	Wayne.	990	19	51.8	+ 0.6	79	20	23	30	42	5.00	+ 2.69	2.00	0	9	10	4	17	n.	
Shenandoah.	Richland.	1,100	20	50.9	- 0.8	76	6	26	29	32	6.38	+ 4.48	1.84	0	13	21	8	14	ne.	
Sidney.	Shelby.	985	28	53.3	- 0.9	83	6	26	29	34	6.18	+ 3.72	2.46	0	12	8	9	14	n.	
Somerset.	Perry.	1,080	12	54.8	- 0.4	78	5	29	29	34	6.06	+ 3.77	2.82	0	11	13	9	9	w.	
Springfield.	Clark.	980	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	14	6	17	8	se.
Summerfield.	Noble.	1,187	5	54.2	.....	81	4	23	29	37	4.66	.....	1.24	0	12	8	15	8	sw.
Syracuse.	Meigs.	583	1	59.0	.....	87	1	31	24	40	4.85	.....	2.06	0	9	7	13	11	.....
Thurman.	Gallia.	696	18	58.0	+ 1.5	84	1	31	24	35	5.26	+ 0.69	0.75	0	6	4	16	11	sw.	
Urbana.	Champaign.	1,031	43	53.0	- 0.6	81	6	25	29	32	7.58	+ 5.39	3.52	0	12	8	16	7	ne.	
Warren.	Trumbull.	900	22	52.0	+ 0.6	75	6	24	29	35	5.39	+ 3.02	1.90	0	9	15	5	11	sw.	
Waverly.	Pike.	590	28	56.0	+ 0.8	86	1	29	24	38	5.43	+ 1.34	1.29	0	11	11	5	15	sw.	
Waynesville.	Warren.	700	26	54.4	- 0.3	82	6	27	29	35	5.65	+ 1.51	0.82	0	10	13	6	12	nw.	
Wooster.	Wayne.	1,030	32	52.0	+ 0.9	75	4†	22	29	34	5.45	+ 3.24	1.30	0	13	13	2	16	sw.	
Youngstown.	Mahoning.	846	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	11	13	1	17	w.
Muskingum.	Muskingum.	700	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	11	7	13	11	s.
Indiana.	Vanderburg.	386	35	59.6	+ 1.6	88	3	35	24	31	1.64	- 1.46	0.91	0	11	6	17	8	ne.	
Farmersburg.	Sullivan.	13	55.8	- 0.7	86	6	29	24	33	2.79	- 0.17	0.68	0	8	5	19	7	sw.		
Farmland.	Randolph.	1,101	29	52.1	- 0.5	80	6	26	28	36	3.25	+ 1.06	1.20	0	10	13	8	12	ne.	
Greenfield.	Hancock.	905	8	55.1	.....	83	6	28	24	37	0.81	+ 4.19	1.88	0	13	9	10	10	w.
Greensburg.	Decatur.	954	15	52.8	- 3.6	81	6	27	29	32	3.18	+ 0.02	1.00	0	14					

TABLE 1.—Climatological data for October, 1911. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelched.	Number of rainy days 0.10 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
<i>Indiana—Continued.</i>																				
Mount Vernon.....	Posey.....	410	25	58.0	+ 0.8	88	6	31	24	33	1.50	- 1.57	0.60	0	11	10	4	17	nw.	Guy B. Green.
Paoli.....	Orange.....	611	14	57.4	+ 0.3	88	3	34	28	37	3.78	+ 0.35	1.29	0	13	9	14	8	ne.	James A. Gillum.
Princeton.....	Gibson.....	481	29	59.2	+ 3.3	91	3	29	23	34	2.42	- 0.03	1.05	0	8	14	5	12	nw.	Albert Mills.
Richmond.....	Wayne.....	972	26	53.0	0.0	84	6	25	29	30	5.03	+ 2.26	2.30	0	12	6	15	10	.....	Walter Vossler.
Rochester.....	Fulton.....	775	6	52.8	.....	78	6	28	29	28	3.76	.....	1.20	0	14	10	7	14	.....	G. P. Keith.
Rockville.....	Parke.....	722	25	54.4	- 0.2	84	6	30	29	30	2.84	+ 0.42	0.92	0	12	9	6	16	nw.	Dr. W. N. Wirt.
Rome.....	Perry.....	370	8	61.2	.....	89	6	32	24	39	3.06	.....	1.01	0	12	13	7	11	.....	Adam Ansbach.
Salamonia.....	Jay.....	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem.....	Washington.....	717	18	56.9	+ 1.0	86	6†	27	24	36	3.81	+ 0.86	1.14	T.	11	13	9	9	w.	Emmet S. Allen.
Scottsburg.....	Scott.....	570	17	58.4	+ 1.4	88	3†	33	24	33	5.57	+ 3.02	1.67	0	10	9	9	13	n.	Frank H. Park.
Seymour.....	Jackson.....	610	24	57.4	+ 1.8	88	6†	27	24	39	5.78	+ 2.80	2.88	0	10	7	16	8	nw.	J. Robt. Blair.
Shelbyville.....	Shelby.....	768	7	55.2	.....	85	6	27	29†	35	3.73	.....	0.84	0	12	8	13	10	sw.	Edgar G. Hodson.
Shoals.....	Martin.....	523	4	.....	.....	.....	.....	.....	.....	.....	4.05	.....	1.99	0	9	.....	.....	.....	.....	Rev. G. Halleck Rowe.
Terre Haute.....	Vigo.....	498	21	56.5	- 0.7	87	6	31	29†	34	2.35	+ 0.12	0.70	0	9	13	4	14	sw.	Prof. R. G. Gillum.
Veedersburg.....	Fountain.....	612	12	55.0	- 1.6	85	6	25	29	35	2.39	+ 0.80	0.56	0	16	14	8	9	n.	L. A. Culver, Jr.
Vevay.....	Switzerland.....	525	30	60.3	+ 3.3	84	6†	35	24	30	9.20	+ 6.90	3.10	0	11	4	11	6	sw.	Miss Frederica Boerner.
Vincennes.....	Knox.....	431	19	56.3	- 1.0	90	6	30	24	38	2.85	- 0.21	1.10	0	9	10	2	19	se.	Garrett V. List.
Washington.....	Daviess.....	484	15	57.5	+ 0.4	88	3	28	24	34	4.10	+ 1.06	2.00	0	11	15	3	13	w.	Charles C. Feagans.
Whitestown.....	Boone.....	529	3	51.6	.....	81	6	29	29	37	6.64	.....	1.28	T.	11	7	13	6	sw.	Clyde O. Laugher.
Winona Lake.....	Kosciusko.....	865	4	53.0	.....	82	6	26	29	33	4.41	.....	0.85	T.	18	4	18	9	se.	Rev. Albert A. Young.
Worthington.....	Greene.....	526	29	56.6	+ 1.1	87	6	28	24	33	3.38	+ 0.70	1.50	0	9	7	13	11	sw.	D. W. Solliday.
<i>Illinois.</i>																				
Albion.....	Edwards.....	531	20	58.2	+ 1.4	88	3	33	24	32	2.16	- 0.18	0.85	0	9	14	6	11	nw.	B. F. Michels.
Carmi.....	White.....	399	.....	54.9	- 0.6	85	6	28	29	30	3.54	+ 0.87	1.47	0	7	15	0	16	n.	Daniel Berry.
Charleston.....	Coles.....	720	26	54.9	.....	85	6	26	29	34	3.54	+ 1.27	0.63	0	10	5	15	11	s.	Jacob B. Daisy.
Danville.....	Vermilion.....	604	10	54.8	.....	86	6	26	29	34	3.54	.....	0.63	0	13	10	7	14	se.	J. J. Lemon.
Equality.....	Gallatin.....	421	13	60.1	+ 0.2	90	3†	32	24	35	2.58	- 1.01	1.30	T.	8	15	9	7	n.	Dr. L. W. Gordon.
Fairfield.....	Wayne.....	495	18	58.2	+ 0.1	89	3†	30	24	34	2.01	- 0.34	1.07	0	7	12	2	17	nw.	George A. Tromly.
Flora.....	Clay.....	495	25	56.6	+ 1.0	90	6	29	24	35	2.81	+ 0.37	0.90	0	8	16	3	12	sw.	Joseph S. Peak.
Golconda.....	Pope.....	500	33	61.2	+ 1.5	91	6	31	24	40	4.04	- 0.60	0.85	0	8	13	6	12	sw.	Dr. D. Lawrence.
Hoopston.....	Vernilion.....	715	9	52.8	.....	82	6	27	29	28	4.19	.....	0.99	0	15	17	6	8	.....	S. F. Hoskinson.
McLeansboro.....	Hamilton.....	462	28	58.2	+ 1.0	90	4	29†	24	37	1.87	- 0.43	0.80	0	5	14	7	10	s.	Mrs. Mary C. Robinson.
Metropolis.....	Massac.....	346	.....	.....	.....	.....	.....	.....	.....	.....	0.94	.....	0.55	T.	3	.....	.....	.....	.....	Prof. M. N. McCartney.
Montrose.....	Effingham.....	599	11	55.3	- 1.8	88	3	28	24	39	4.19	+ 2.21	1.15	T.	10	8	16	7	sw.	J. C. Spittler.
Mount Carmel.....	Wabash.....	424	10	57.3	- 0.6	88	3†	31	24	35	2.80	+ 0.19	1.26	0	11	9	3	19	.....	Mrs. H. M. Phillips.
New Burnside.....	Johnson.....	556	16	57.4	- 1.6	89	3	28	26	34	3.54	- 0.25	1.72	0	8	9	11	11	s.	Thomas H. McCabe.
Olnay.....	Richland.....	486	24	57.6	+ 1.1	88	6	30	24	31	3.05	+ 0.74	1.63	T.	9	6	10	15	n.	Victor E. Phillips.
Palestine.....	Crawford.....	500	29	57.6	+ 2.2	88	3†	30	24	42	4.19	+ 1.59	1.60	T.	11	9	9	13	ne.	Duane Shaw.
Paris.....	Edgar.....	600	18	53.2	- 1.4	82	3	28	29	32	2.57	+ 0.39	1.02	0	7	9	16	6	sw.	H. P. Twymann.
Philo.....	Champaign.....	700	27	53.4	+ 0.4	84	3†	26	29	33	3.95	+ 1.75	1.10	0	7	13	9	9	ne.	H. A. Burr.
Rantoul.....	Crawford.....	768	20	54.0	- 0.4	84	3	27	29	32	3.11	+ 1.25	0.71	T.	13	16	5	10	sw.	William Breiner.
Robinson.....	.....	500	11	57.6	+ 0.2	88	3†	31	24	34	4.65	+ 1.74	3.22	T.	7	14	1	16	se.	A. P. Woodworth.
Sumner.....	Lawrence.....	459	5	57.8	.....	85	6	30	24	30	2.44	.....	0.71	0	8	12	7	12	n.	O. A. Fyffe.
Tuscola.....	Douglas.....	644	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. W. Lester.
Urbana.....	Champaign.....	725	10	53.6	+ 0.2	84a	3	29	24	29a	3.10	+ 1.46	0.95	0	10	4	21	6	sw.	Prof. J. G. Mosier.
<i>Kentucky.</i>																				
Alpha.....	Clinton.....	700	17	62.2	+ 3.1	88	3	33	23	33	2.39	- 0.11	1.36	0	6	10	7	14	w.	W. W. Hicks.
Anchorage.....	Jefferson.....	700	10	56.4	+ 0.5	83	3†	28	24	40	4.08	+ 1.47	1.25	0	11	12	8	11	nw.	C. E. Barrett.
Bardstown.....	Nelson.....	637	14	60.1	+ 0.9	92	3	31	24	39	2.98	+ 1.17	0.62	0	11	11	1	19	sw.	G. M. Talbott.
Beattyville.....	Lee.....	650	7	59.2	.....	90	3	28	24	45	5.22	+ 2.40	0.94	0	11	10	6	15	n.	G. W. Cann.
Beaver Dam.....	Ohio.....	441	8	60.1	.....	92	3	29	24	40	3.12	.....	1.30	0	8	12	8	11	se.	T. S. Woodward.
Berea.....	Madison.....	1,070	10	60.0	+ 1.9	86	1	29	24	38	5.68	+ 3.58	1.43	0	12	15	6	10	ne.	C. F. Runold.
Bowling Green.....	Warren.....	500	22	61.5	+ 2.6	94	3	31	23†	43	1.80	- 0.29	0.70	0	7	11	3	17	sw.	Mrs. L. G. Causey.
Burnside.....	Pulaski.....	773	20	.....	.....	.....	.....	.....	.....	.....	2.81	+ 0.51	0.89	0	8	12	5	14	sw.	G. M. Estes.
Calhoun.....	McLean.....	397	8	62.2	.....	92	3	30	24	37	3.07	.....	1.49	0	11	8	16	7	sw.	W. A. Taylor.
Catlettsburg.....	Boyd.....	544	22	.....	.....	.....	.....	.....	.....	.....	4.31	+ 1.86	1.70	0	12	19	0	12	w.	Mrs. Mertie M. Bruns.
Earlington.....	Hopkins.....	370	21	61.4	+ 2.4	93	3	32	24	42	1.15	- 1.09	0.34	0	6	17	4	10	n.	Brick Southworth.
Edmonton.....	Metcalf.....	600	20	60.3	+ 3.4	93	3	30	23†	46	3.19	+ 1.01	0.80	0	12	11*	9*	10*	ne.	Miss Lee Ray.
Eubank.....	Pulaski.....	1,171	17	59.4	+ 2.8	87	3	29	24	40	3.03	+ 0.91	0.87	0	7	7b	7b	15	ne.	Mrs. Katie Payne.
Falmouth.....	Pendleton.....	530	22	.....	.....	.....	.....	.....	.....	.....	5.39	+ 3.42	2.80	0	13	15	2	14	sw.	J. V. Oldham.
Farmers.....	Rowan.....	668	5	58.5	.....	87	1	30	23†	44	8.42	.....	4.50	0	9	17	0	14	.....	Miss Gertrude Sorrell.
Frankfort.....	Franklin.....	560	20	61.7	+ 5.2	81	3	34	23	32	3.41	+ 1.46	0.95	0	11	13	2	16	s.	J. H. Roberts.
Franklin.....	Simpson.....	691	17	62.4	+ 3.6	94	3	32	24	38	1.75	- 0								

TABLE I.—Climatological data for October, 1911. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Tennessee—Continued.																					
Bluff City.	Sullivan.	14	26	62.8	+ 4.4	92	7	31	29	37	5.50	3.42	1.86	0	10	5	9	9	13	sw.	John W. Fisher.
Bluffton.	Pickett.	1,026	18	62.8	+ 4.4	92	7	31	29	37	2.82	+ 0.29	1.04	0	7	11	3	17	sw.	John Lacy.	
Carthage.	Smith.	500	27	65.2	+ 5.9	96	3	33	25	41	2.45	+ 0.11	1.55	0	10	12	10	9	n.	Earl C. Pi-kering.	
Cedar Hill.	Robertson.	625	11	62.9	+ 2.3	94	3	34	23	35	2.43	+ 0.41	0.55	0	10	12	10	9	n.	J. Frank Rulif.	
Celina.	Clay.	494	8	48	+ 2.3	94	3	34	23	35	3.07	—	1.85	0	7	10	4	17	s.	Stephen B. Anderson.	
Center Point.	Chester.	400	14	—	—	—	—	—	—	—	2.67	+ 0.18	3.86	0	8	15	8	8	n.	Halbert H. Bailey.	
Charleston.	Bradley.	709	14	—	—	—	—	—	—	—	5.56	+ 3.18	3.12	0	8	10	9	9	n.	John T. Weeks.	
Chattanooga.	Hamilton.	808	32	65.6	+ 4.8	92	3	39	23	29	4.87	+ 2.03	0.50	0	6	12	0	10	n.	U. S. Weather Bureau.	
Clarksville.	Montgomery.	500	48	61.2	+ 4.4	89	2	33	24	33	2.54	+ 0.51	0.80	0	8	17	4	10	ne.	Prof. James A. Lyon.	
Clinton.	Anderson.	800	23	—	—	—	—	—	—	—	4.75	+ 2.51	2.29	0	6	12	5	14	w.	Hugh Evans.	
Dandridge.	Jefferson.	726	2	65.0	—	96	3	31	23	45	4.08	—	1.50	0	5	11	4	4	sw.	James E. Swann.	
Decatur.	Meigs.	850	15	64.8	+ 5.3	96	7	31	23	40	5.35	+ 2.43	2.84	0	11	14	13	4	sw.	J. Worth Jillard.	
Dickson.	Dickson.	800	15	62.2	+ 2.2	90	3	31	23	38	2.25	+ 0.14	0.65	0	5	16	9	6	n.	Nathan R. Sugg.	
Dover.	Stewart.	500	16	—	—	—	—	—	—	—	3.90	—	1.30	0	6	12	5	14	w.	Ass M. Tippit.	
Dunlap.	Squatchie.	726	2	65.0	—	96	3	31	23	45	4.75	+ 2.51	2.50	0	5	11	4	4	sw.	S. Bradford Boyd.	
Elizabethhton.	Carter.	1,575	21	—	—	—	—	—	—	—	4.83	+ 2.74	1.50	0	7	12	2	17	e.	Charles Boyd.	
Erasmus.	Cumberland.	1,850	14	59.8	+ 4.4	87	1†	25	23	44	4.09	+ 0.65	1.18	0	10	13	12	6	sw.	Mrs. Sara E. Ashley.	
Florence.	Rutherford.	560	29	63.4	+ 4.1	90	2†	32	23	34	2.71	+ 0.37	1.10	0	6	18	8	8	s.	Erastus F. Bell.	
Franklin.	Williamson.	648	21	62.6	+ 3.8	90	2	34	23	33	2.61	+ 0.32	1.28	0	6	16	7	8	s.	Young M. Rizer.	
Hall's Hill.	Rutherford.	9	—	—	—	—	—	—	—	—	2.50	—	1.50	0	5	18	0	13	s.	Ed F. Wright.	
Harriman.	Roane.	841	16	64.7	+ 6.1	91	1	32	23	36	7.38	+ 4.89	3.98	0	5	7	21	3	n.	Robert R. Ayres.	
Hohenwald.	Lewis.	983	25	62.6	+ 4.9	89	3	30	23	37	4.83	+ 2.56	1.53	0	6	15	9	7	nw.	John Lutzelman.	
Iron City.	Lawrence.	600	14	63.8	+ 3.7	93	3†	30	23	37	3.03	+ 0.61	1.13	0	5	8	17	6	nw.	Capt. H. Paul Seavy.	
Jefferson City.	Jefferson.	1	—	—	—	—	—	—	—	—	4.27	—	1.84	0	6	10	12	9	—	Calvin C. Maddox.	
Johnson City.	Washington.	1,620	26	61.6	+ 5.2	89	2	33	24	38	3.12	+ 0.71	0.97	0	9	12	8	11	n.	Ward Crosby.	
Johnsonville.	Humphreys.	364	15	62.4	+ 2.4	92	3	32	23	37	2.39	+ 0.07	0.96	0	7	18	4	9	nw.	Miss Sallie B. Matthews.	
Kingston.	Roane.	20	—	—	—	—	—	—	—	—	6.13	+ 3.74	2.60	0	7	18	0	13	n.	Henry Crumbilis.	
Knoxville.	Knox.	977	40	64.0	+ 5.9	90	3	38	25	33	3.78	+ 1.17	2.34	0	8	10	12	9	n.	U. S. Weather Bureau.	
Lebanon.	Wilson.	522	29	63.8	+ 4.7	92	3	32	23	38	3.83	—	1.30	0	7	13	6	12	n.	H. Logan Fields.	
Lewisburg.	Marshall.	727	16	64.4	+ 4.5	95	3	31	24	44	2.89	—	0.0	0	6	15	9	7	nw.	Dr. Robert D. Crutcher.	
Livingston.	Overton.	1,065	23	63.4	—	92	3†	29	23	46	2.60	—	1.10	0	3	12	13	6	w.	L. H. Carlock.	
Loudon.	Loudon.	816	8	—	—	—	—	—	—	—	4.60	+ 2.66	1.90	0	8	9	8	14	w.	Robert W. Clark.	
Lynnville.	Giles.	770	23	62.6	+ 3.3	90	3	35	23	32	3.46	+ 0.94	1.46	0	5	15	10	6	e.	Col. James H. Burrow.	
McGhee.	Monroe.	7	—	—	—	—	—	—	—	—	3.70	—	1.68	0	6	19	0	12	e.	Miss Alice L. Headrick.	
McMinnville.	Warren.	1,011	27	64.0	+ 5.7	92	3	33	23	38	2.98	+ 0.30	1.14	0	10	8	16	7	n.	J. Tilden Sparkman.	
Maryville.	Blount.	1,050	15	64.2	+ 4.0	91	3	35	23	37	4.09	+ 1.70	1.65	0	7	16	10	5	e.	Mrs. Sam T. Broyles.	
Mountain City.	Johnson.	2,480	14	57.8	+ 5.0	80	1†	24	21	41	4.40	+ 1.48	1.29	0	10	10	10	8	n.	Edward E. Barry.	
Nashville.	Davidson.	654	40	63.0	+ 2.7	90	3	35	23	33	2.21	—	0.27	0	6	11	10	10	n.	U. S. Weather Bureau.	
Newport.	Cooke.	1,280	21	63.8	+ 7.2	86	3†	36	23	31	3.00	+ 0.98	1.27	0	8	7	3	21	sw.	Dr. Charles T. Burnett.	
New River.	Scott.	1,215	4	—	—	—	—	—	—	—	2.94	—	1.20	0	5	9	6	16	w.	Burl W. Buttram.	
Palmetto.	Bedford.	770	18	64.4	+ 2.9	93	3	32	23	39	2.70	+ 0.09	1.20	0	6	13	11	7	n.	Mrs. Ross Woods.	
Pinewood.	Hickman.	400	4	61.2	—	—	—	—	—	—	2.52	—	1.20	0	4	13	12	6	n.	Miss Carrie Cash.	
Pope.	Perry.	400	14	—	—	—	—	—	—	—	3.70	—	1.68	0	6	19	0	12	e.	Miss Bessie Howard.	
Rogersville.	Hawkins.	1,150	26	62.5	+ 5.9	89	7	33	24	41	4.44	+ 2.02	1.18	0	12	16	7	8	e.	Fred Beal.	
Rugby.	Morgan.	1,410	23	60.6	+ 6.0	89	3†	25	23	47	2.73	+ 0.44	0.91	0	5	11	7	13	nw.	Samuel G. Wilson.	
Savannah.	Hardin.	442	27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sevierville.	Sevier.	5	63.3	—	—	90	7	33	25	35	3.78	—	1.53	0	9	5	11	15	sw.	Herbert O. Eckel.	
Sewanee.	Franklin.	2,000	13	63.0	+ 4.4	86	3†	34	27	30	4.39	+ 1.25	0	5	11	6	14	s.	Arthur H. Noll.		
Sparta.	White.	920	5	63.0	—	89	3	34	23	36	2.25	—	1.40	0	5	16	8	7	w.	Ernest H. Hull.	
Springville.	Henry.	377	61.6	—	—	92	2	28	24	40	1.82	—	0.82	0	6	20	4	7	n.	Hudnall A. Boden.	
Tazewell.	Clairborne.	1,350	14	63.6	+ 7.3	90	3†	29	23	45	3.94	+ 1.33	1.51	0	8	16	6	9	s.	J. Caloway Carr.	
Tullahoma.	Coffee.	1,075	23	62.9	+ 5.0	90	3	30	23	34	3.34	+ 0.59	1.50	0	7	13	11	7	nw.	Reuben T. Moore.	
Walling.	White.	909	8	—	—	—	—	—	—	—	3.68	—	1.20	0	6	10	11	10	sw.	John K. Roberts.	
Waynesboro.	Wayne.	753	25	63.3	+ 4.9	92	3	31	24	39	2.94	+ 0.88	1.15	0	6	15	8	8	n.	Harry C. Boyd.	
Wildersville.	Henderson.	400	14	65.2	+ 5.4	93	3	34	23	36	2.45	—	1.65	0	5	15	7	14	w.	William R. Wilson.	
Worsham.	Henderson.	550	10	—	—	—	—	—	—	—	2.50	—	0.85	0	7	12	5	14	w.	James G. Elizer.	
Yukon.	Lincoln.	850	14	62.6	+ 1.2	89	1	33	23	33	3.27	+ 0.50	1.63	0	4	13	12	6	n.	William P. Watson.	
Georgia.																					
Diamond.	Gilmer.	2,020	21	63.0*	+ 5.9	87	1†	33	23	34	4.05	+ 1.50	2.51	0	8	13	8	10	—	R. A. Kimzey.	
Mineral Bluff.	Fannin.	1,571	—	62.7	—	90	3	30	24	38	3.66	—	2.53	0	4	11	19	1	w.	J. M. Clement.	
North Carolina.																					
Altapass.	Mitchell.	2,629	11	63.8	—	90	5	30	25	42	4.86	—	2.40	0	9	14	14	3	sw.	W. J. Woodward.	
Andrews.	Cherokee.	1,300	1	63.8	—	90	5	30	25	42	4.86	—	2.15	0	9	10	12	9	se.	J. D. Link.	
Asheville.	Buncombe.	2,255	32	59.2	+ 3.9	85	7	35	26	35	3.83	+ 0.89	1.97	0	5	19	0	12	—	U. S. Weather Bureau.	
Banners Elk.	Avery.	3,750	3	54.8	—	76	3†	27	26	39	4.25	—	1.80	0	8	13	6	12	—	T. L. Lowe.	

TABLE 1.—*Climatological data for October, 1911. District No. 8—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of overcast days.		
<i>Virginia.</i>																				
Big Stone Gap.....	Wise.....	1,540	20	60.2	+ 5.4	81	1	32	25	34	5.19	+ 2.97	1.70	0	9	13	6	12	n.	John W. Fox, sr.
Blacksburg.....	Montgomery.....	2,170	20	56.4	+ 4.0	81	4	28	25	37	5.74	+ 3.05	2.19	0	12	13	8	10	w.	Agri. Experiment Sta.
Burkes Garden.....	Tazewell.....	3,250	16	52.8	+ 3.3	74	1†	21	26	45	6.53	+ 3.44	2.80	0	8	11	4	16	w.	C. H. Greever.
Elk Knob.....	Lee.....	3,243	8	60.3	.....	81	1	33	23	22	4.96	.....	1.65	0	13	12	7	12	sw.	Henry Nicoll.
Ivanhoe **.....	Wythe.....	2,028	7	52.7	.....	78	4†	30	25	30	4.61	.....	2.00	0	11	7	16	s.	Miss Alice G. Jewett.	
Lebanon.....	Russell.....	2,131	1	60.2	.....	84	1†	29	26	43	6.25	.....	1.93	0	10	15	1	15	sw.	R. W. Swain.
Max Meadows.....	Wythe.....	2,028	15	55.7	+ 2.3	82	7	26	25	35	4.60	+ 1.51	1.55	0	9	19	6	6	sw.	James M. Graham.
Mendota.....	Washington.....	1,350	2	.....	.....	.....	.....	.....	.....	.....	6.84	.....	2.17	0	14	10	15	12	nw.	Frank M. Barker.
Mountain Lake.....	Giles.....	4,348	1	53.6	.....	74	4	30	23	29	5.36	.....	1.10	0	9	15	4	12	nw.	Harry E. Dorland.
Radford.....	Montgomery.....	1,773	2	.....	.....	.....	.....	.....	.....	.....	5.30	.....	2.04	0	9	10	15	12	.....	Arthur Roberts.
Speers Ferry.....	Scott.....	1,221	15	.....	.....	.....	.....	.....	.....	.....	3.00	+ 0.76	0.72	0	9	10	15	12	.....	Mrs. L. E. Venable.
Wytheville.....	Wythe.....	2,293	18	56.4	+ 2.8	79	7	30	25	38	5.16	+ 2.02	2.05	0	12	14	9	8	e.	U. S. Weather Bureau.

*, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for October, 1911. District No. 3, Ohio Valley.*

Stations.	Watershed.	Day of month.																													Total.					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
<i>New York.</i>																																				
Allegany.....	Allegheny.....	.80	.02	..	.75	.04	.13	.55	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.67	3.54	
Bolivar.....	do.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3.74
Olean |||.....	do.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>Pennsylvania.</i>																																				
Aleppo.....	Ohio.....	.37	.75	..	.10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.10	5.10
Baldwin.....	Allegheny.....	3.00	.60	.10	.10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.36	8.79
Beaver Dam |||.....	Ohio.....	T.	1.13	..	.28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	4.96
Brookville.....	Allegheny.....	2.05	..	..	.22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.22	4.78
Clarion |||.....	do.....	..	..	..	.40	..	.02	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.04	6.69
Claysville.....	Ohio.....	.51	.26	..	.51	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.03	6.68
Confluence |||.....	You'og'ny.....	T.	1.40	.25	.30	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.12	5.72
Davis Island Dam |||.....	Ohio.....	.70	..	.36	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	5.42
Derry Station.....	Allegheny.....	.41	.14	.27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.09	4.87
Franklin |||.....	do.....	..	..	..	.88	..	.16	.06	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.10	5.15
Freeport |||.....	do.....	..	..	..	.40	..	.21	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.09	6.02
Greensburg |||.....	Monong'h'a.....	.04	.64	..	.10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.20	4.56
Greensburg.....	You'og'ny.....	.25	.32	.29	.19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.11	4.27
Greenville.....	Ohio.....	.21	.20	.01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.04	8.89
Grove City.....	do.....	..	..	.02	.23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.44	6.55
Herrs Island Dam |||.....	Allegheny.....	T.	.51	.48	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	4.94
Indiana.....	do.....	..	..	.25	.16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.13	6.67
Irwin.....	Monong'h'a.....	.54	.17	.12	.26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.15	4.42
Johnstown.....	Allegheny.....	.76	.06	.20	..	.05	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.09	8.75
Lock No. 4 |||.....	Monong'h'a.....	.48	..	.25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	4.12
Lycippus.....	Allegheny.....	.25	.36	.40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.12	4.19
Parkers Landing |||.....	do.....	..	..	.30	.24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.04	4.94
Pittsburgh.....	Ohio.....	.38	.11	.64	T.	..	.22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.12	4.94
Saegerstown.....	Allegheny.....	.55	.14	.30	..	.02	.80	.01	.05	.10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.46	5.01	
SAFtsburg |||.....	do.....	T.	.82	.04	.30	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.08	5.38
Skidmore.....	Ohio.....	.39	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	6.45
Somerset.....	You'og'ny.....	.51	.42	.40	.11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.10	4.77
Springdale |||.....	Allegheny.....	.81	..	.26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.07	5.63
Uniontown.....	Monong'h'a.....	.36	.02	.26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.13	6.06
Warren.....	Allegheny.....	1.10	..	.10	.26	..	.30	.30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.86	4.85
West Newton |||.....	You'og'ny.....	.01	.60	.01	.42	.02	..	.47	.01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	4.52
<i>Maryland.</i>																																				
Deer Park.....	You'og'ny.....	.06	1.49	.19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	6.23
Grantsville.....	do.....	.50	.90	.25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.02	5.63
Oakland.....	do.....	.20	.70	.07	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.01	5.63
<i>West Virginia.</i>																																				
Bancroft |||.....	G. Kanawha.....	.05	.73	.55	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.05	4.50
Beckley.....	do.....	1.98	1.70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.20	7.20
Bens Run.....	Ohio.....	.34	.57	..																																

TABLE 2.—*Daily precipitation for October, 1911. District No. 3—Continued.*

TABLE 2.—*Daily precipitation for October, 1911. District No. 3—Continued.*

Stations.	Watershed.	Day of month.																													Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
<i>Indiana—Contd.</i>																																
Lafayette |||	Wabash	.65	.21	.10	.05	.07	.53	.20	.01	.17	.41	.03	.09	.18	.05	T.	.65	T.	.02	.33	.02	2.86										
Laurel	Whitewater	.03	.38	.01	.03	.53	.20	.01	.17	.12	.03	.85	.01	.14	.06	.39	2.96															
Logansport |||	Wabash	.17	.02	.10	.67	.12	.10	.50	.22	.56	.04	1.50	.16	.34	.05	.11	.27	4.03														
Madison	Ohio	.96	3.74	.03	.12	.10	.50	.22	.56	.04	1.50	.31	.10	.12	8.30																	
Marengo	do	* 2.16	.10	.11	.84	.23	T.	* 82	.15	.15	.15	.15	* 34	4.25																		
Marion |||	Wabash	1.00	.15	.07	.10	.75	.04	.10	.15	.40	.30	.60	.11	.25	.05	4.07																
Mauzy	East Fork, White	.43	.14	.03	T.	.93	.05	.24	.14	.11	.47	.15	T.	.27	.26	3.23																
Monticello |||	Wabash	.20	.83	T.	.80	T.	.36	T.	T.	.56	.60	T.	.30	.81	.50	.06	.20	5.22														
Moore Hill	Ohio	.53	1.15	.09	.12	.32	.01	.42	.17	.29	.33	1.08	.63	.16	.60	5.90																
Mount Vernon |||	do	.60	.14	.12	.06	.05	.02	.20	.02	.20	.03	.10	.02	.16	.15	.02	.16	1.50														
Paoli	East Fork, White	1.29	.42	.03	.16	.01	.11	.09	.35	.02	.08	.74	T.	.20	.28	3.78																
Princeton	Wabash	1.05	.06	.25	.02	.07	.23	.25	.19	.26	.62	T.	.14	.18	.49	.2.42																
Richmond	Whitewater	.38	.32	T.	.91	1.39	T.	.14	.15	.34	T.	.36	.27	.44	.06	5.03																
Rochester	Wabash	1.20	.35	.02	.20	.05	.40	T.	.01	.08	.02	.15	.16	.26	.09	.14	.18	3.76														
Rockville	do	.59	.11	.09	.92	.30	.01	T.	.08	.02	.15	T.	.15	.09	.16	.06	.06	3.06														
Rome	Ohio	.62	.23	.30	.08	.09	.05	.37	.10	1.01	.09	.15	T.	T.	.12	.3.81																
Salamonie	Wabash	.95	.51	T.	.05	.13	.25	.36	.05	10	1.14	T.	.15	.15	.15	.57																
Salem	Ohio	1.17	1.67	.10	.10	T.	.24	.33	.25	24	1.20	T.	T.	.12	.12	.3.81																
Scottsburg	East Fork, White	2.88	.01	T.	.28	.13	.20	.30	.33	.21	.76	.17	.28	.57	.78																	
Seymour	do	.55	.13	.03	.84	.06	.17	.37	.25	.84	.12	.08	.22	3.73																		
Sheblyville	do	* 1.99	.05	.18	.13	.09	.09	T.	.24	.16	.10	.08	.04	2.38																		
Shoals |||	do	.50	.70	.04	.52	.20	.01	T.	.05	.13	.29	.53	.63	.47	.40	4.05																
Terre Haute	Wabash	.47	.56	.02	.02	.18	.13	.01	.30	.03	.01	.39	.17	.34	.48	.17	.01	3.29														
Veedersburg	do	.90	3.10	.10	.10	.10	* 1.35	T.	.35	1.00	.1.65	.50	T.	.10	.35	2.85																
Vevay	Ohio	2.00	.44	T.	.30	.10	.04	.20	.02	.14	.09	.15	.62	.62	.4.10																	
Washington	West Fork, White	.05	1.28	.01	.17	.94	T.	.06	T.	.55	1.17	T.	T.	.09	.19	4.64																
Whitestown |||	Wabash	.81	.38	.05	.15	T.	.04	.40	.01	.01	T.	.50	.30	.06	.85	.04	.15	.13	.17	4.41												
Winona Lake	West Fork, White	.30	1.50	.08	.40	T.	.04	T.	.19	.13	.35	T.	.15	.21	.39	T.	3.38															
<i>Illinois.</i>																																
Albion	Wabash	.85	.03	.06	.16	T.	.09	.20	.26	.23	.20	.26	.28	.2.16																		
Carmi	do	.85	.35	.02	.35	T.	.05	.09	.20	.20	.59	.12	.08	.20	.2.02																	
Charleston	do	1.11	.36	.02	.30	T.	.05	.66	.25	.53	.63	.47	T.	.20	.02	3.54																
Danville	do	.48	.28	.04	.31	.07	T.	.09	.13	.29	.53	.63	.47	T.	.20	.2.58																
Equality	Ohio	1.30	T.	.25	.35	.04	T.	.18	.20	.21	T.	.05	.05	.40	.2.01																	
Fairfield	Wabash	1.07	T.	.10	.28	T.	.07	.02	T.	.07	.22	.30	T.	T.	.2.81																	
Flora	do	.90	.29	.28	.54	T.	.24	.21	.21	.22	.50	T.	.09	.07	2.38																	
Golconda	Ohio	.23	.14	.29	.85	T.	.44	.61	.27	.24	.99	.47	.02	.28	.04	4.19																
Hoopston	Wabash	.41	.11	.01	.20	T.	.08	.70	.15	.10	.25	T.	T.	.10	.2.57																	
McLeansboro	Ohio	.80	T.	.24	.55	T.	.09	.20	.26	.23	.20	.26	T.	T.	.09	.94																
Metropolis	do	T.	.24	.55	T.	.10	.21	T.	.44	.25	T.	.15	.15	.4.19																		
Monrose	Wabash	1.15	.74	.15	.59	.41	.10	.21	.20	.30	T.	.04	.18	.04	.38	2.80																
Mount Carmel |||	do	T.	1.26	.04	.12	.20	T.	.04	.20	.30	T.	.03	.21	.15	.05	2.94																
New Burnside	Ohio	1.72	T.	.46	.30	T.	.08	.22	.02	.36	T.	.12	.12	.3.05																		
Olney	Wabash	1.16	.47	.25	.30	.29	.08	.22	.02	.01	.21	T.	T.	.15	.01	4.19																
Palestine	do	1.20	1.60	.10	.65	.02	.10	.15	.10	.15	.15	.02	.1.02																			
Paris |||	do	.10	.40	.70	T.	.07	.10	.15	.10	.15	.15	.02	.1.02																			
Philo	do	.59	.38	.38	T.	.07	.10	.15	.10	.15	.15	.02	.1.02																			
Rantoul	do	.65	.03	.25	.06	.05	T.	.25	.18	.02	.15	.71	.48	.25	.03	3.11																
Robinson	do	3.22	.72	T.	.49	.16	.16	.07	.10	.15	.32	T.	.12	.05	4.65																	
Summer	do	.71	.51	.25	.49	.16	T.	.07	.10	.10	.10	T.	.21	.10	T.	2.44																
Tuscola	do	.95	.11	.05	.02	.01	T.	.45	.45	.30	.78	.16	T.	.27	.3.10																	
<i>Kentucky.</i>																																
Alpha	Cumberland	T.	.08	T.	.08	T.	.136	.20	T.	.12	.55	T.	T.	.08	2.39																	
Anchorage	Ohio	1.25	.05	.22	.08	.33	.56	.05	.80	.54	T.	.10	.10	.4.08																		
Bardstown |||	Salt	.53	.06	T.	.12	T.	.49	.62	T.	.30	.34	.13	.30	T.	.05	2.98																
Beattyville	Kentucky	.94	.52	T.	.84	.44	.62	.56	.28	.58	.22	T.	.12	.5.22																		
Beaver Dam |||	Green	1.30	.30	.12	.23	.27	.20	.20	.70	.70	.10	.22	T.	.12	3.12																	
Berea	Kentucky	.38	1.43	.03	T.	.90	.34	.61	.09	.61	.85	.18	T.	.11	.5.68																	
Bowling Green |||	Green	.03	.40	.40	.40	.45	.70	.02	.25	.25	.05	.05	.18	.1.60																		
Burnside |||	Cumberland	.70	.07	.34	T.	.19	.89	.14	.06	.36	.40	T.	T.	.2.81																		
Calhoun	Green	1.49	.45	.07	.45	.07	T.	.07	.13	.03	.32	.06	.06	.03	.08	3.07																
Catlettsburg |||	Big Sandy	1.70	.04	.12	.27	.34	.24	.20	.10	.1.20	.02	.04	T.	.04	4.31																	
Earlington |||	Green	.25	.05	.08	.22	.05	T.	.34	.21	T.	.15	.15	T.	.15	.1.15																	
Edmonton	do	.32	.22	.12	.10	.01	.80	.64	.05	.05	.65	.15	.08	.08	3.19																	
Eubank |||	Cumberland	.75	.13	.15	.15	.87	.19	.02	.58	.30	.55	.16	.02	T.	3.03																	
Falmouth |||	Licking	2.30	.12	.01	.28	.01	.64	.02	.25	.79	.80	.23	T.	.10	.5.59																	
Farmers	do	.55	4.50	.25	.80	T.	.25	.25	.25	.79	.80	.23	T.	.8.42																		
Frankfort |||	Kentucky	.95	.04	.16	.14	.35	.04	T.	.67	T.	.81	.11	.03	T.	.11	.3.41																
Franklin	Green	T.	.27	T.	.25	T.	.25	T.	.67	T.	.1.00	.18	T.	.05	1.75																	
Greensburg |||	do	.80	.20	.09	.15	.95	.29	.07	.07	.10	.50	.06	.06	T.	.05	3.23																
High Bridge |||	Kentucky	.78	.92	.09	.05	.55	.46	.10	.19	.01	.21	.46	.21	.06	.06	4.15																
Hopkinsville	Cumberland	T.	.40	.32	.32	.12	T.	.10	.38	T.	.1.11	.1.44	.17	T.	.1.32																	
Irvington	Ohio	1.33	T.	.35	.48	.38	.22	T.	.29	.83	.83	.15	T.	.5.18																		
Leitchfield	Green	.79	.35	.57	* 74	T.	.27	.21	.27	.02	.58	.39	T.	.02	3.74																	
Lexington	Kentucky	1.07	.09	.02	.60	.27	.10	.10	T.	.1.55	.90	.09	T.	.02	3.67																	
Loretto	Salt	.33	.40	T.	.49	.30	.52	T.	.14	.01	.62	.03	.08	T.	.03	3.03																
Louisville	Ohio	1.05	.08	.04	.01	.49	.13	.04	.14	.01	.11	.62	.03	.08	.05	.04	2.89															
Marion	do	.18	T.	.22	.72	T.	T.	.22	T.	.22	T.	.22	T.	T.	.1.34																	
Maysville |||	do	T.	1.90	.02	.03	.05	.16	.31	.06	.24	.16	.59	T.	.25	.10	3.87																
Middlesboro	Cumberland	.08	.65	.53	.01	.01	3.60	.03	.37	1.33	.02	.08	.07	.07	.6.69																	
Mount Sterling |||	Licking	2.95	.																													

TABLE 2.—*Daily precipitation for October, 1911. District No. 3—Continued.*

Stations.	Watershed.	Day of month.																																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.	
Kentucky—Contd.																																		
Taylorsville.	Salt	.80	.77	..	.1116	..	.14	.39	.3011	.03	..	.603107	3.49	
Williamsburg |||	Cumberland	.64	.05	.03	1.10	.30	1.00	.80	.03	3.95		
Williamstown |||	Licking	3.75	.24	.0517	.15	..	.81	.0133	.03	.10	.56	..	T.	6.20		
Tennessee.	•																																	
Ashwood.	Tennessee.05	1.20	.8135	.30	T.	2.76	
Benton.	..	.1003	T.	.95	1.00	1.85	T.	4.34		
Bird's Bridge |||	..	.03	.15	.22	.0302	..	.71	.43	10.1	.79	T.	3.75		
Bluff City |||	..	.42	.47	1.1553	..	.25	.55	30.1	.56	T.	5.50		
Byrdstown.	Cumberland	1.04	1.00	..	.0953	.15	T.	2.82	
Carthage	T.	.1003	..	.55	T.	..	.55	..	T.	.30	T.	2.45	
Cedar Hill.	..	..	T.	.40	.01	.50	..	..	.03	..	.55	..	..	..	..	..	T.	..	.40	.30	..	..	..	..	..	..	..	..	..	T.	2.43
Celina	1.85	.16	T.	3.07		
Center Point.	Tennessee.81	T.	..	.73	.2328	.50	..	T.	.12	T.	2.67	
Charleston |||	..	..	.04	.24	..	.08	..	..	..	..	..	.50	.78	.06	..	..	..	..	3.30	.56	..	..	..	..	..	..	..	..	..	T.	5.56
Chattanooga.	..	..	..	..	..	..	..	..	..	..	..	.31	.88	.01	..	..	..	1.71	1.42	..	..	..	..	..	..	..	..	..	..	T.	4.46
Clarksville.	Cumberland	.80	.03	.31	..	..	..	..	T.	.07	.63	..	..	..	..	..	T.	..	.48	..	..	..	..	..	..	..	..	..	T.	2.84	
Clinton |||	Tennessee.	.33	.23	..	..	..	..	..	..	..	1.24	.66	..	..	..	..	..	..	1.76	.53	..	..	..	..	..	..	..	..	..	T.	4.75
Dandridge |||	..	..	.74	..	..	..	..	..	..	..	.63	.80	..	..	..	..	..	..	40	1.30	..	..	..	..	..	..	..	..	..	T.	3.90
Decatur.	..	.03	.02	.06	T.	..	..	..	..	..	.05	1.43	.03	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.35
Dickson.	Cumberland	..	..	.35	..	..	..	..	..	..	.18	..	.64	..	..	..	..	..	.65	.43	..	..	..	..	..	..	..	..	..	T.	2.25
Dover.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.25
Dunlap.	Tennessee.	.02	..	..	..	..	..	..	..	..	15	.75	.04	..	..	..	..	1.00	1.00	..	..	..	..	..	..	..	..	..	..	T.	4.08
Elizabethton |||	..	.71	.39	.8156	.40	T.	..	.56	1.50	..	T.	.46	T.	4.83		
Erasmus.	Cumberland	T.	.05	.73	T.	..	..	..	.04	T.	.56	1.18	.02	..	..	..	..	.52	.87	..	T.	.09	..	..	..	..	..	..	..	T.	4.09
Florence.	..	..	T.	..	..	..	..	..	T.	1.10	.75	..	..	..	..	..	T.	..	.55	..	T.	.19	..	..	..	..	..	..	..	T.	2.71
Franklin.	..	..	..	..	..	..	..	..	..	T.	1.28	.41	..	..	..	..	..	..	1.38	..	..	..	..	..	..	..	..	..	T.	2.50	
Hall's Hill |||	..	..	T.	.24	..	..	..	..	T.	..	1.50	.11	..	..	..	..	..	..	2.47	..	..	..	..	..	..	..	..	T.	7.38		
Harriman.	Tennessee.	T.	.43	..	..	..	..	..	T.	..	3.98	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	4.83	
Hohenwald.	..	..	.62	..	..	..	..	..	..	1.45	.72	..	..	..	..	..	..	1.53	.41	..	..	..	..	..	..	..	..	T.	3.03		
Jefferson City.	..	..	.21	.50	.03	..	..	..	T.	..	1.84	..	..	..	..	..	..	1.50	..	..	..	..	..	..	..	..	T.	2.27			
Johnson City |||	..	.54	.33	.13	..	..	..	..	T.	..	..	.35	.31	..	..	..	..	..	1.10	.97	..	..	..	..	..	..	..	T.	3.12		
Johnsonville.	..	..	T.	..	..	..	..	..	T.	..	.20	.96	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.39		
Kingston |||	..	..	.06	..	..	..	..	..	T.	..	.17	1.11	T.	..	..	..	..	1.16	1.00	..	T.	..	..	..	..	..	..	..	T.	6.13	
Knoxville.	..	..	.08	.01	..	..	..	..	T.	..	2.05	T.	..	..	..	..	T.	..	.46	..	..	..	..	..	..	..	T.	11.78			
Lebanon.	Cumberland	T.	T.	..	.10	..	..	..	T.	..	1.30	.86	.11	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.55			
Livingston.	Cumberland	..	..	..	..	..	..	..	T.	..	.79	.85	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.60			
Loudon |||	..	.08	.22	T.	..	..	..	..	T.	..	.30	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.46			
Lynville.	..	..	..	..	..	..	..	..	T.	..	.90	1.46	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.70			
McGhee |||	..	..	.40	..	..	..	..	..	T.	..	.60	.92	.02	..	..	..	..	..	1.08	.68	..	..	..	..	..	..	..	T.	2.98		
McMinnville.	Cumberland	.33	.02	T.	..	..	..	..	T.	..	22	1.11	.03	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	1.60			
Maryville.	Tennessee.	.59	.15	..	..	..	..	..	..	..	25	1.65	.05	..	..	..	..	T.	1.30	..	..	..	..	..	..	..	T.	10.40			
Mountain City.	..	..	.28	.24	.25	.83	..	..	T.	..	.17	.02	.77	..	..	..	..	..	1.29	1.29	..	..	..	..	..	..	..	T.	4.40		
Nashville.	Cumberland	..	..	T.	..	..	..	..	T.	..	1.13	.50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.21			
Newport |||	Tennessee.	..	..	.21	.03	..	..	..	..	..	..	..	.48	.78	.03	..	..	..	..	14	1.27	..	..	..	..	..	..	T.	3.00		
New River |||	Cumberland	..	..	.50	..	..	..	..	..	..	..	..	..	.98	.22	..	..	..	..	..	..	..	..	..	..	..	T.	2.94			
Palmetto.	Tennessee.	..	..	.10	..	..	..	..	T.	..	..	40	1.20	T.	..	..	..	..	..	20	.55	..	T.	.25	..	..	T.	2.70			
Pinewood.	..	..	..	..	..	..	..	..	T.	..	..	1.20	.05	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.52				
Pope.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.94				
Rogersville |||	..	..	.02	.52	.60	T.	..	..	..	..	..	.76	.64	..	..	..	..	..	..	..	..	..	..	..	..	T.	4.44				
Rugby.	..	..	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	12.73				
Savannah.	Cumberland	..	..	T.	..	..	..	..	..	..	..	.90	.65	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.78				
Sevierville.	..	..	T.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	4.39				
Swanee.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	2.25				
Sparta.	Cumberland	..	..	T.	..	..	..	..	..	..	..	.25	1.40	T.	..	..	..	..	..	..	..	..	..	..	..	..	T.	1.82			
Springville.	..	..	..	..	.50	..	..	..	..	..	..	.25	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.94				
Tazewell |||	..	..	.35	.27	..	..	..	..	T.	..	..	.93	.58	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.34				
Tullahoma.	Cumberland	..	..	.15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	T.	3.68				
Walling |||	Tennessee.	..	..	.48	..																										

TABLE 2.—*Daily precipitation for October, 1911. District No. 3—Continued.*

Stations.	Watershed.	Day of month.																													Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
<i>Virginia.</i>																																
Big Stone Gap.....	Tennessee.....	.10	.22	.97	T.	.....	.25	.....	T.	1.50	.....	.....	.....	.....	T.	.20	1.70	.....	.....	.....	.....	.22	.....	.....	.....	.....	.10	.....	.....	.....	5.19
Blacksburg.....	Kanawha.....	.05	1.75	.03	.....	.....	.30	.10	.....	.42	.06	.....	.07	.12	.....	2.19	.03	.....	.....	.....	.....	.62	.....	.....	.....	.....	.....	.....	.....	.....	5.74
Burks Garden.....	Tennessee.....	.....	2.80	.....	.....	.....	.27	.....	.66	.10	.....	.....	.....	.....	.....	.30	2.00	.08	.....	.....	.....	.32	.....	.....	.....	.....	.....	.....	.....	.....	6.53
Lebanon.....	.....	.....	.....	1.00	.27	.03	.....	.90	.....	1.51	.....	.06	.....	.....	.15	1.93	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....	6.25	
Ivanhoe.....	.....	.....	.....	1.22	.10	T.	.....	.....	.30	.05	.10	.25	.....	T.	.....	.10	.09	2.00	T.	.....	.....	.10	.30	.....	.....	.....	.....	.....	.....	.....	4.61
Elk Knob.....	.....	.....	.....	.17	.32	.65	.01	.....	.05	.....	1.56	.03	.....	.....	.03	.13	.....	1.65	.03	T.	.....	.18	.....	.....	.....	.15	.....	T.	.....	4.96	
Max Meadows.....	Kanawha.....	T.	1.23	T.	.02	.....	.17	.05	.....	.60	.....	.....	.....	.....	.....	.28	.....	1.55	.20	.....	.....	.50	.....	.....	.....	.....	.....	.....	.....	.....	4.60
Mandota II.....	Tennessee.....	.....	.24	.18	.12	.06	.04	.....	.05	.....	.85	.58	.....	.....	.....	1.40	.....	.38	2.17	.....	.....	.62	.08	.....	.....	.10	.....	.....	.....	6.84	
Mountain Lake.....	Kanawha.....	1.03	.90	.....	.....	.....	.65	.....	.13	.65	.....	.10	.....	.....	.....	.20	T.	1.10	.....	T.	.....	.60	.....	T.	.....	.....	.....	.....	.....	5.36	
Radford II.....	Tennessee.....	.....	1.10	.70	.....	.....	.....	.24	.12	.26	.22	.....	.....	.....	.....	.10	T.	2.04	.....	.....	.....	.....	.52	.....	.....	.....	.....	.....	.....	.....	5.30
Spears Ferry II.....	.....	.....	.....	.20	.30	.38	.....	.....	.....	.30	.60	.....	.....	.....	.....	.01	.17	2.05	.....	.....	.....	.....	.37	.....	.....	.....	.....	.....	.....	.....	3.00
Wytheville.....	Kanawha.....	.....	.04	1.55	.02	.02	.....	.....	.24	.05	.....	.57	.07	.....	.....	.01	.17	2.05	.....	.....	.....	.....	.37	.....	.....	.....	.....	.....	.....	.....	5.18

* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

II Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—Maximum and minimum temperatures at selected stations for October, 1911. District No. 8, Ohio Valley.

Date.	Pennsylvania.				West Virginia.												Ohio.											
	Greenville.		Pittsburgh.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington.		Morgan- town.		Parkersburg.		Wheeling.		Canton.		Cincinnati.		Columbus.		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	62	47	72	50	85	56	79	53	75	47	83	50	82	53	76	48	83	54	69	50	71	50	80	59	76	53	76	57
2....	60	46	58	52	80	65	79	55	67	56	73	53	74	60	70	53	70	56	59	50	61	45	71	58	63	53	67	55
3....	64	37	63	46	78	58	71	50	66	52	78	58	76	58	65	52	73	55	78	48	70	42	83	56	69	47	75	51
4....	78	54	77	56	80	64	78	54	77	60	81	61	78	58	78	56	79	60	81	50	78	56	77	58	76	53	75	54
5....	58	45	56	47	77	52	80	53	61	45	75	46	79	58	70	46	62	50	60	46	67	45	65	51	59	46	62	46
6....	70	43	75	46	81	48	79	50	80	44	82	45	79	48	79	44	81	49	79	46	76	45	84	51	82	48	83	48
7....	57	35	67	48	80	53	76	60	76	47	72	49	71	50	73	49	76	50	54	50	69	45	73	50	66	45	70	47
8....	66	29	62	40	67	53	70	50	60	46	62	49	62	51	62	45	60	49	63	43	64	36	60	47	61	43	60	44
9....	70	30	67	47	63	55	70	54	69	52	71	55	66	51	65	46	67	56	68	42	63	36	66	55	63	52	62	49
10....	66	43	65	54	68	60	69	60	64	52	68	56	67	51	65	54	64	64	49	67	57	62	54	66	56	62	54	66
11....	62	52	66	53	73	60	70	54	70	50	74	57	70	60	69	54	71	55	72	52	64	49	72	56	69	50	70	54
12....	59	46	60	50	72	51	66	51	59	48	66	52	65	51	67	49	64	52	71	49	63	44	69	52	64	46	66	47
13....	62	34	63	49	65	48	67	42	66	45	67	44	62	49	62	50	60	48	66	45	64	39	65	50	63	48	59	46
14....	68	37	67	45	66	48	73	44	66	42	71	49	65	48	70	43	67	46	69	43	67	37	68	48	61	44	64	44
15....	73	45	66	54	71	53	75	50	67	46	71	51	70	50	69	53	60	50	72	44	67	48	68	52	65	53	67	52
16....	74	43	71	50	78	53	77	51	77	43	80	46	76	53	78	44	77	46	76	49	73	42	80	57	76	52	80	57
17....	62	51	66	52	76	59	74	55	64	54	68	58	65	54	68	60	69	56	66	49	64	54	67	55	68	54	67	53
18....	64	40	60	52	65	53	70	50	58	47	66	54	63	54	63	52	64	48	68	53	66	44	65	50	62	48	65	47
19....	64	33	63	43	66	47	66	40	67	44	68	44	64	47	66	39	67	43	66	44	70	36	69	45	68	46	66	45
20....	69	34	66	45	70	47	70	44	78	42	75	51	66	48	74	42	70	43	70	44	73	39	70	50	69	48	70	45
21....	73	44	73	57	73	55	72	45	73	48	64	49	70	49	74	51	74	56	77	45	64	44	65	53	64	50	58	53
22....	64	43	64	46	73	49	70	47	62	42	58	33	56	55	64	50	61	46	64	45	62	43	57	39	58	40	61	41
23....	57	37	60	42	60	41	68	38	60	39	67	33	59	40	57	41	59	42	62	41	57	36	57	38	54	37	53	38
24....	55	30	55	38	60	37	58	31	55	31	70	49	60	36	56	34	54	36	61	33	58	32	56	36	53	35	55	34
25....	64	29	64	39	66	35	65	35	68	27	60	40	63	35	65	37	65	33	67	34	66	32	66	37	63	30	62	39
Mns.	62.5	38.5	62.4	45.9	69.8	50.4	70.4	47.3	65.9	43.9	68.6	47.3	66.2	48.4	66.0	45.2	65.7	47.6	65.6	43.3	64.2	40.9	66.1	48.6	62.6	45.6	63.4	46.0

Date.	Ohio.				Indiana.												Kentucky.											
	Marion.		Waverly.		Butlerville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.		Philo, Ill.		Beattyville.		Bowling Green.		Earlington.		Greensburg.		Lexington.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	72	53	86	49	87	66	83	66	75	58	74	57	72	59	77	60	72	36	88	53	90	61	92	60	87	54	83	60
2....	72	53	72	58	81	61	78	68	57	52	72	53	67	56	70	63	67	56	85	58	92	67	89	68	86	65	78	60
3....	68	44	74	54	88	59	88	66	83	56	82	48	82	52	85	63	84	55	90	60	68	53	93	70	90	56	85	59
4....	73	62	80	65	80	65	76	61	76	53	77	61	76	61	78	64	76	55	82	60	81	67	80	70	76	65	76	58
5....	73	40	69	43	68	43	72	53	63	48	64	39	68	45	68	46	65	42	77	44	80	48	82	47	76	45	65	51
6....	82	46	83	45	86	52	88	57	84	52	84	49	84	54	87	54	84	54	88	45	92	49	92	53	83	45	84	52
7....	75	48	79	52	78	54	72	52	71	47	73	44	71	47	82	50	74	48	75	47	79	52	83	60	85	44	75	51
8....	69	27	60	48	58	46	58	51	58	43	61	39	57	42	57	48	59	42	65	47	77	52	83	61	85	53	73	49
9....	63	43	67	47	67	54	60	52	60	51	61	43	59	50	60	53	60	47	68	50	63	67	64	61	65	50	65	55
10....	64	52	64	58	67	55	72	56	66	55	67	52	67	52	70	53	67	66	67	67	53	76	53	84	54	64	59	64
11....	69	46	73	55	74	49	76	56	69	53	68	44	69	49	73	50	73	45	84	58	79	56	81	53	77	56	71	58
12....	67	42	68	45	70	44	71	54	69	49	70	40	69	46	71	46	75	45	72	47	74	55	79	51	70	46	66	52
13....	68	43	59	48	70	42	69	51	66	50	63	40	67	48	69	45	68	42	75	41	72	46	77	43	72	42	66	48
14....	68	40	61	43	71	56	76	55	65	52	73	51	70	53	71	54	74	54	67	67	82	50	82	45	76	42	69	51
15....	71	48	72	57	67	44	83	60	65	48	69	39	67	44	68	46	69	39	76	4								

TABLE 3.—Maximum and minimum temperatures for October, 1911. District No. 3—Continued.

Date.	Kentucky.						Tennessee.										Decatur, Ala. §§				Asheville, N. C.		Virginia.			
	Louisville.		Maysville. §§		Williams- burg. §§		Chatta- nooga.		Johnson City. §§		Knoxville.		Nashville.		Palmetto.		Sparta.		Waynes- boro.		Big Stone Gap.		Wythe- ville.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	82	64	86	50	89	60	89	68	87	56	86	64	87	67	90	68	87	64	88	68	92	68	79	58	81	58
2....	79	62	76	63	88	59	89	72	89	65	84	70	89	74	91	73	87	69	89	71	92	69	78	61	76	65
3....	89	61	87	56	90	69	92	69	87	65	90	68	90	73	93	70	89	69	92	65	97	65	70	59	80	67
4....	79	61	82	57	87	68	90	70	85	63	87	68	83	66	89	71	86	67	90	63	100	66	83	60	80	66
5....	69	53	72	46	78	49	88	64	77	52	80	58	85	54	88	60	87	64	88	64	77	54	75	51	69	45
6....	87	54	89	46	90	50	90	61	87	51	87	54	88	58	92	60	88	54	91	59	93	63	78	49	77	48
7....	77	55	71	46	82	59	90	68	83	61	88	68	77	60	86	66	85	64	81	60	92	63	85	57	80	58
8....	57	51	64	48	86	54	82	64	77	59	80	66	65	56	67	59	67	60	64	57	80	61	68	51	70	58
9....	66	56	73	50	82	61	66	61	72	56	76	66	63	53	68	57	71	61	64	57	80	60	69	51	70	68
10....	69	57	67	54	78	61	67	63	69	60	66	63	66	60	70	61	67	62	69	60	73	63	64	59	69	63
11....	72	58	76	57	74	56	75	62	75	61	74	63	76	63	78	64	74	62	77	65	77	62	75	60	70	68
12....	70	53	71	49	71	48	76	60	70	55	70	54	75	58	77	59	72	59	75	65	76	62	66	49	65	54
13....	69	50	72	46	73	46	73	55	73	42	72	50	73	52	76	47	75	45	75	45	77	52	68	42	60	46
14....	73	53	70	46	86	48	77	57	74	46	74	54	78	55	80	53	78	53	79	49	79	52	68	50	70	48
15....	75	59	72	47	85	51	84	56	75	54	81	60	84	61	85	58	82	53	83	59	81	55	77	48	73	54
16....	81	57	85	50	86	49	75	62	82	53	81	58	76	63	76	59	73	59	75	61	73	56	75	51	76	53
17....	66	55	65	51	84	45	66	57	66	60	64	58	67	57	68	57	70	56	69	56	66	60	67	52	70	58
18....	67	51	70	49	76	50	69	54	61	54	64	51	69	51	69	50	69	51	69	46	68	54	60	60	59	42
19....	70	46	74	43	81	49	69	48	65	41	68	47	72	46	74	43	71	44	68	42	68	47	68	40	66	43
20....	74	52	75	42	79	53	72	52	75	42	72	51	74	51	75	50	73	49	70	58	72	47	68	45	70	43
21....	60	51	79	46	78	48	75	59	75	50	76	58	66	50	77	52	76	53	70	53	78	54	69	54	70	51
22....	54	40	55	52	81	43	65	41	63	59	62	45	54	39	62	45	65	44	68	49	55	47	66	42	62	43
23....	59	38	62	35	78	35	67	39	61	39	64	35	70	32	63	34	55	40	66	35	57	33	55	35	57	36
24....	59	33	63	31	72	33	63	44	60	33	62	40	65	32	65	32	65	34	66	31	66	36	63	36	59	34
25....	68	39	70	32	81	32	65	41	63	33	65	38	69	39	72	34	69	34	70	33	67	33	66	37	66	32
26....	68	44	71	34	84	37	64	47	73	35	69	39	72	39	76	37	72	36	72	33	71	39	70	35	69	31
27....	49	40	52	37	87	39	69	54	63	35	68	52	64	47	70	52	69	54	73	42	70	40	60	49	64	52
28....	50	38	55	37	86	47	67	50	68	43	65	47	61	42	60	47	59	45	71	43	62	45	58	47	63	53
29....	60	44	62	36	87	43	71	47	66	43	66	42	66	40	72	36	67	38	70	36	69	42	65	47	62	44
30....	60	47	60	35	68	46	73	50	72	45	71	48	74	47	76	45	75	44	75	47	71	40	69	42	68	38
31....	58	50	59	39	56	33	64	56	64	47	61	53	66	47	61	55	66	44	60	47	67	41	61	52	64	49
Mns..	68.3	50.9	70.5	45.6	80.7	49.1	74.8	56.5	72.8	50.3	73.3	54.6	72.7	53.4	75.8	53.1	73.9	52.1	74.1	52.5	76.4	52.9	69.3	49.1	69.1	51.3
																										46

^a, ^b, ^c, etc., indicate respectively 1, 2, 3, etc., days missing from the record.

§ Data are from standard instruments not supplied by the U. S. Weather Bureau.

\$\$ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.